January 2, 1952

Dr. H. H. McKinney
Division of Cereal Crops and Diseases
U. S. D. A.
Beltsville, Md.

Dear Dr. McKinney:

Thankyyou for calling my attention to your paper on virus preservation. I don't have a well-worked out method for preservation on a silica gel, only an idea on which I've done a few experiments. I simply thought that one could dry cultures directly on a chemically inert dessicant such as anhydrous silica gel. The problem is in roughly the same state as your own experience-- a design that looks good, but will have to be worked out in detail.

I would imagine that silica gel ought to work very well with plant viruses, but I have no experience along this line. All I have done has been to add a dense suspension of bacteria to about twenty parts of silica gel (Davidson Co., Baltimore, Grade 40) in a small tube, then seal off in air. The material dries down almost immediately. Survival has been erratic: probably the best menstrum should be worked out. The silica tubes are baked beforehand to sterilize and dehydrate them, and are then kept in a vacuum dessicator.

I am pleased in your interest in this, and hope that you or your staff may be able to give some attention to it. It is the sort of thing that noone is likely to want to handle unless they are closely concerned with preservation problems. On the other hand, I think that the biophysics of preservation of living organisms is a subject of the deepest theoretical importance, about which we are woefully ignorant.

Sincerely,

Joshua Lederberg
Associate Professor of Genetics